Course Prefix and Number: Math 111   **Credit Hours:**   3

Course Title: Precalculus

Course Prerequisites: ACT score of 25 or higher, Math placement test score, or a grade of "C" or higher in Math 102.

Textbook: Hornsby, Lial, Rockswold. <u>A Graphical Approach to Precalculus</u>, 4th edition. Addison Wesley, 2007.

Course Description: A course in precalculus. Topics include graphs of linear functions, graphs of polynomial functions and inequalities, exponential and logarithmic functions and equations, analytic geometry, trigonometric functions and applications, trigonometric identities and equations.

Learning Outcomes:

At the end of this course, the student will

     A. graph and analyze basic functions and relations;
     B. graph quadratic functions and inequalities;
     C.   perform operations on exponential and logarithmic functions and equations;
     D.   graph and analyze the conics;
     E.   verify trigonometric identities and solve trigonometric equations;
     F.   solve trigonometric applications using the law of sines and cosines.

   To achieve the learning outcomes, the student will
(The letter designations at the end of each statement refer to the learning outcome(s).)

    1. perform operations on linear functions; (A)
    2. graph linear equations; (A)
    3. graph and solve linear inequalities; (A)
    4. graph basic functions and their transformations; (A)
    5. graph and solve rational functions; (B)
    6. solve quadratic, polynomial, rational, exponential and logarithmic equations both algebraically and graphically; (C)
    7. graph and analyze the parabola, ellipse, hyperbola, and circle. (D)
    8. verify trigonometric identities; (E);
    9. solve trigonometric equations: (E)
    10. solve trigonometric applications. (F)

Course Requirements: Take a comprehensive final examination.

Course Grading Scale:

    90 – 100   A
    80 – 89   B
    70 – 79   C
    60 – 69   D
      0 – 59   F